C. WEILAND.

CUSHION TIRE.

APPLICATION FILED MAR. 14, 1908.

919,661. Patented Apr. 27, 1909.

Fig. 1.

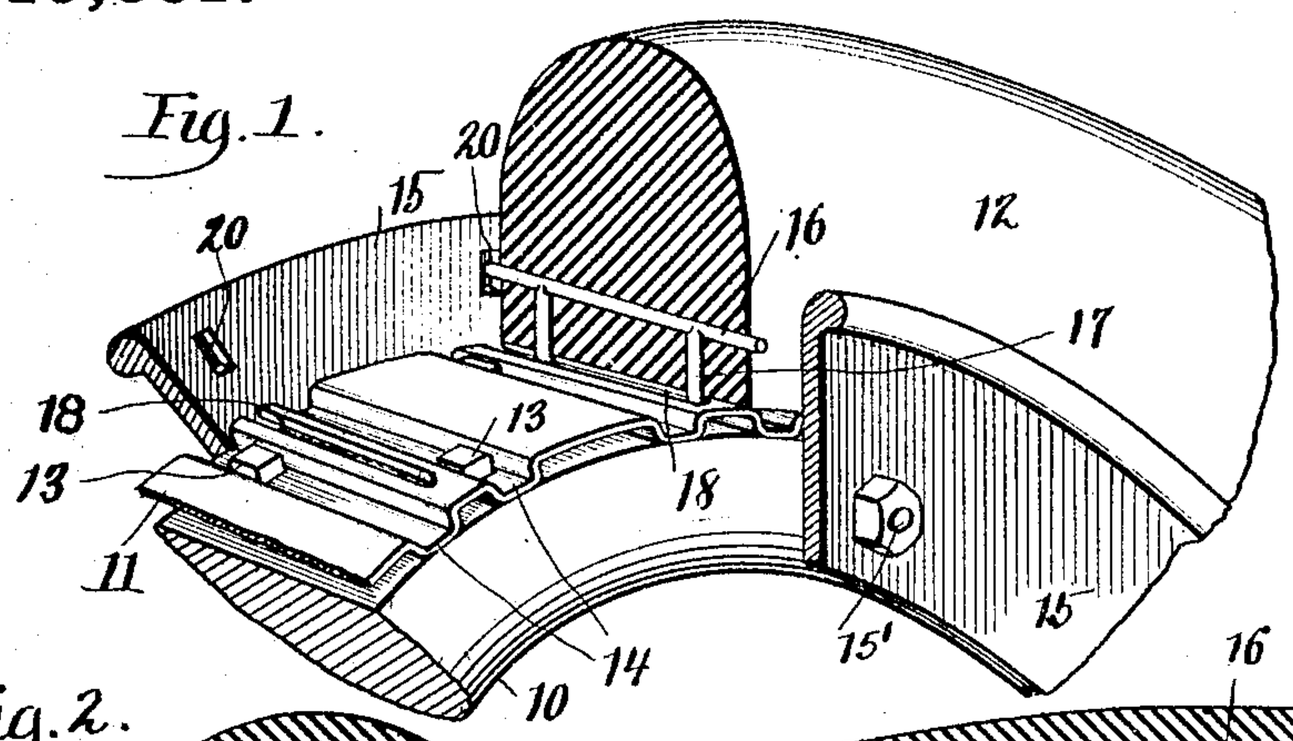


Fig. 2.

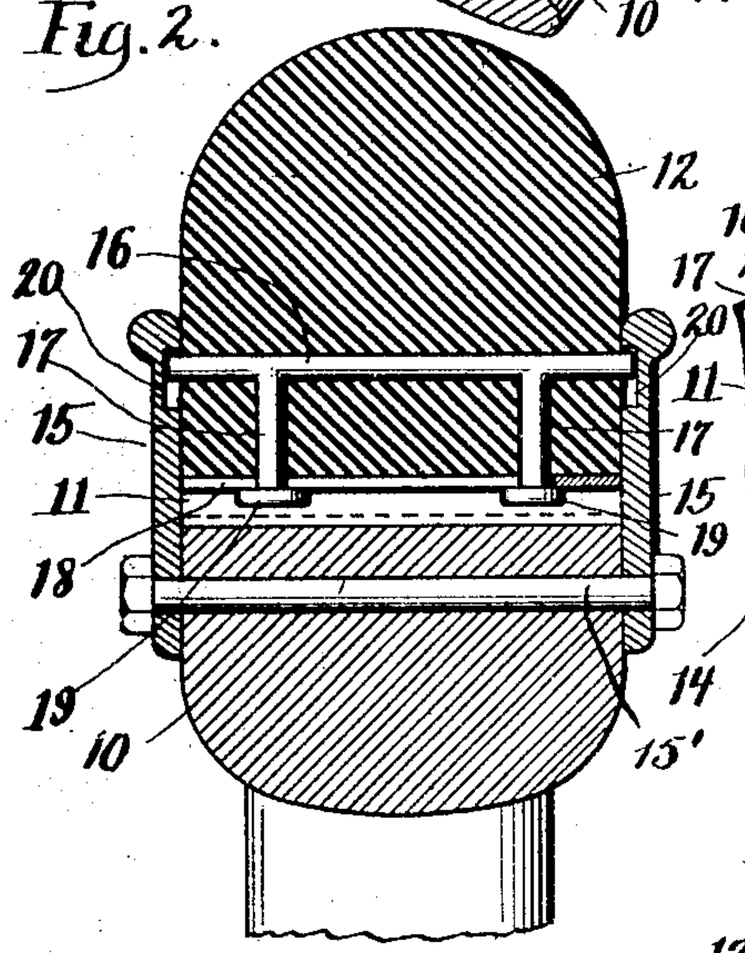


Fig. 3.

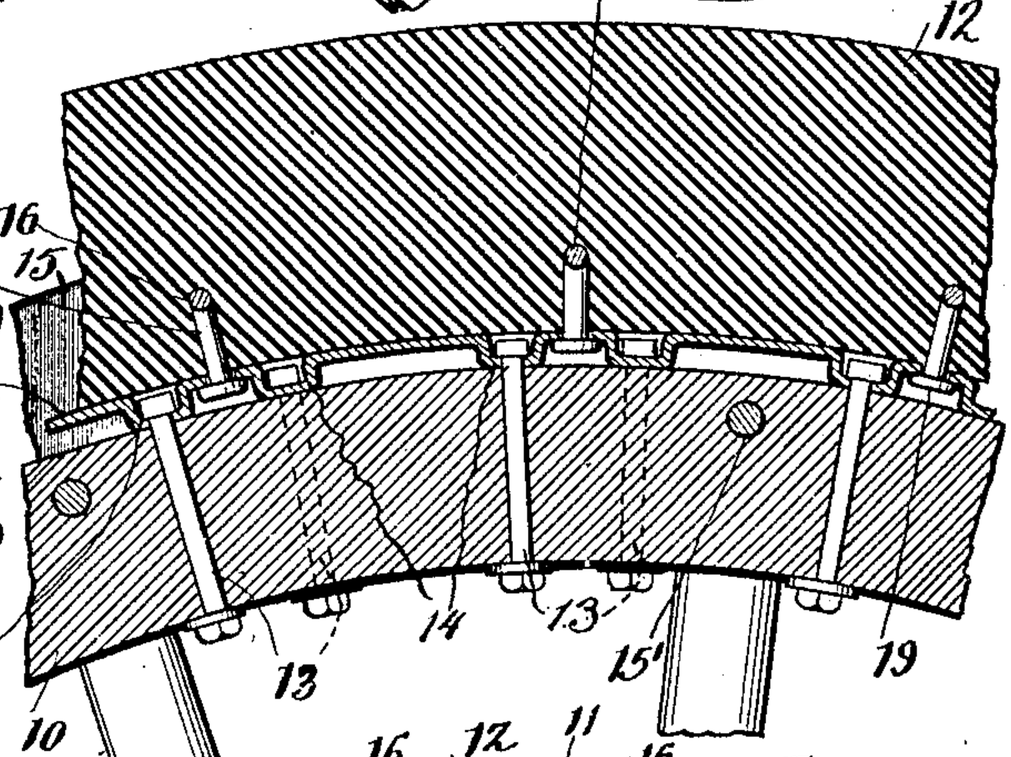


Fig. 4.

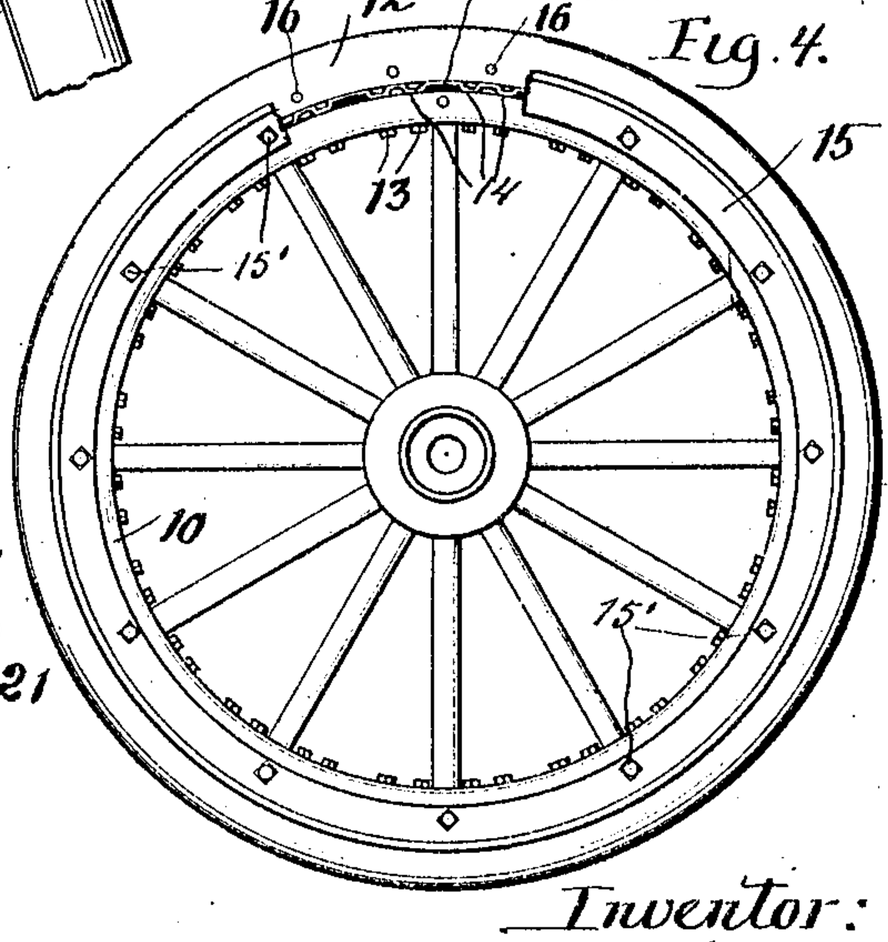
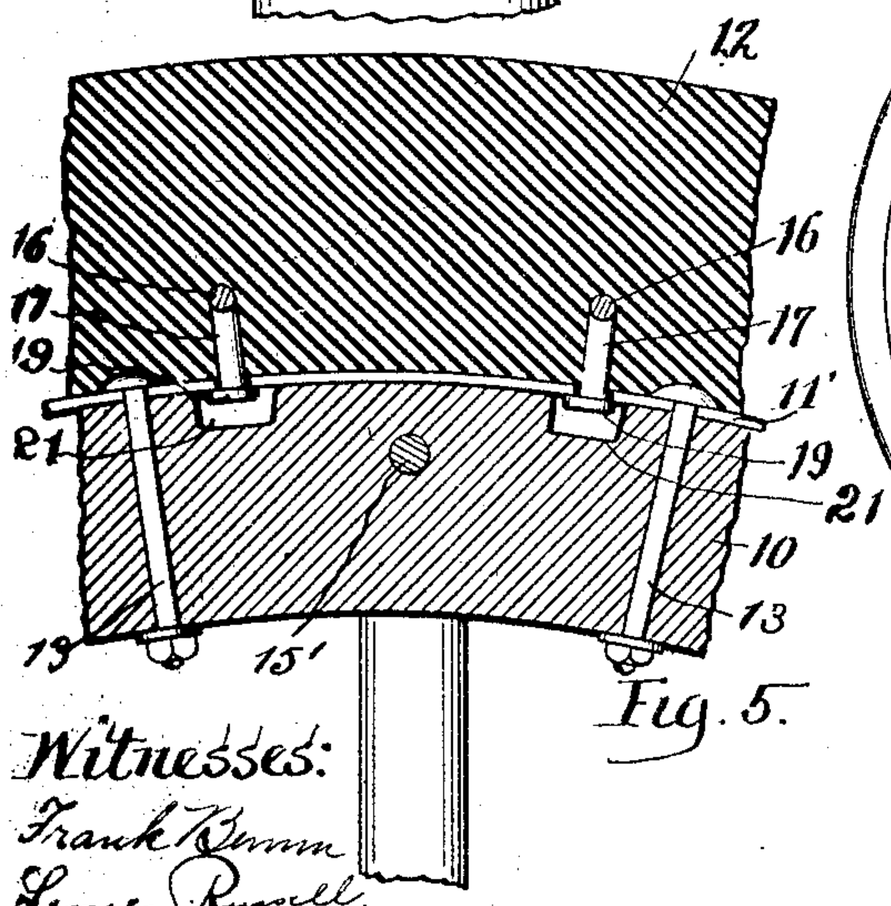


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CUSHION-TIRE.

No. 919,661. Specification of Letters Patent. Patented April 27, 1909.

Application filed March 14, 1908. Serial No. 421,061.

To all whom it may concern:

Be it known that I, CHARLES WEILAND, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cushion-Tires, of which the following is a full, clear, and exact description.

The invention relates to cushion-tires and more particularly to the means employed for securing the elestic body or strip to the rim.

The invention designs to provide improved means for securing the elastic body in the rim-channel and consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Figure 1 is a perspective, parts being shown in section, of a portion of a wheel embodying the preferred form of the invention. Fig. 2 is a transverse section. Fig. 3 is a longitudinal section. Fig. 4 is a side elevation of a wheel having the improved tire applied thereto, and Fig. 5 is a longitudinal section illustrating a modified form of the invention.

The improved tire comprising a rim and an elastic-body 12 held in the rim. The rim comprises a felly 10 which constitutes the base of the rim and rings or plates 15, secured to the felly by through-bolts 15′ constitute the sides of the rim-channel whereby the elastic body is held against lateral movement.

Felly 10, which may be of usual construction, has secured to its outer face or periphery, a strip or band 11 which may extend entirely around the felly. If desired, the band may be constituted of a series of strips. Strip or band 11 forms the base of the channel in which the elastic body 12 is held. Strip 11 is secured to the felly by bolts 13, the heads of which are held in recesses or pockets 14 formed in or on strip 11, the outer face of the band being separated from the periphery of the felly to provide spaces between the strip 11 and the felly for the purpose hereinafter set forth.

The elastic strip or body is endless in form to extend continuously around the rim and its base is seated snugly and fits around strip 11. The elastic body is secured to and anchored in the rim-channel by a series of stays or cross-bars 16, which extend laterally through the elastic body near its base and legs 17 which may be integrally formed with said cross-bars respectively, and which have their lower ends extending through slots 18 in the felly-strip 11 and are secured against outward movement by enlargements or heads 19 at their lower ends which are adapted to engage the inner face of strip 11. Slots 18 are formed in raised portions of strip 11 so that the heads on legs 17 may be disposed between the strip 11 and the felly, and so as to leave the heads free to move inwardly when the elastic body is compressed vertically. Each cross-bar or stay 16 is provided with a plurality of legs 17 so that the elastic body will be held against outward movement at each side thereof. This construction constitutes a slip-connection between the anchors and the rim-strip or strips, for securing the elastic body against outward movement.

The ends of the cross-bars or stays 16 are arranged to project laterally from the elastic body and into guide-ways or recesses 20 formed on the inner sides of the side-rings 15 respectively. This construction forms a sliding-connection between the stays or cross-bars and the rim, whereby the elastic body will be secured against longitudinal movement in the rim.

In assembling the tire, the strip 11 is first securely connected to the felly by bolts 13. The elastic body is then slipped laterally around the felly strip 11 in such manner that legs 17 will enter slots 18 in the strip 11, said slots extending to one edge of said strip so that the legs can pass into them. The projecting portions of the heads 19 will then be held by the band or strip 11. The side-rings 15 are then secured to the felly. When the parts have been thus secured together, the elastic body will be firmly secured against outward movement in the rim-channel and between the rim-sides 15. The sliding connections between the ends of the cross-stays 16 and the side-rings 15 permit the elastic body to be compressed and secure the stays against longitudinal movement in the rim. The spaces between the rim-band or strip 11 and the felly permit the connections for securing the elastic body against outward movement, to yield inwardly when the

elastic body is compressed, without, however, permitting the base of the elastic body to move away from the rim-strip or band 11.

The improved tire possesses several important advantages, in that the elastic body with the anchors secured therein may be quickly and conveniently applied to and secured in the rim and when thus secured, its resiliency will not be materially affected by the securing-means. The tire can also be quickly removed from, or replaced on, the rim when desired. Furthermore, the cross-stays are connected to the rim so that they can yield inwardly with the elastic body and so they will secure the elastic strip against longitudinal movement in the rim.

In the modified form of the invention illustrated in Fig. 5 a flat strip or band 11′ is secured to the felly by bolts 13 and the felly has formed therein recesses or grooves 21 in which the heads 19 are disposed so they may move inwardly.

The invention is not to be understood as restricted to the details illustrated and described since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body seated in the rim and having an integral base-portion extending between the rim-sides, anchors secured in said body, a strip secured in the rim and adjacent the base of said body, and a detachable connection between the anchors and said strip, said connection permitting the entire elastic body to be removed from one side of the strip.

2. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion, anchors secured in said body, a strip secured to the rim and disposed adjacent the base-portion of said body, and a connection between said anchors and said strip for holding the anchors to secure the body against outward movement, said connection comprising heads on the anchors and adapted to be held by said strip.

3. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion, anchors secured in said body and projecting inwardly from the base-portion thereof, a strip seated in the base of the rim and having raised portions, and a connection between the raised portions of said strip and the anchors for holding the anchors to secure the body against outward movement.

4. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion, anchors secured in said body and projecting inwardly from the base-portion thereof and provided with heads, and a strip secured to the rim and having raised portions, said heads being disposed to be held by the raised portions of said strip.

5. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion held in the rim, anchors secured in said body comprising cross-stays or bars in said body and legs rigid with said stays, a strip secured to the rim and disposed adjacent the base of said body and a connection between said legs and said strip for holding the anchors to secure the body against outward movement.

6. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion seated in said rim, anchors secured in said body, each comprising a cross-bar or stay, and a plurality of inwardly extending legs connected to the bar, a strip secured to the rim and disposed adjacent the base-portion of said body, and a connection between said anchor-legs and said strip for holding the anchors to secure the body against outward movement.

7. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion, anchors secured in said body, each comprising a cross-bar or stay, and a plurality of inwardly extending legs connected to the bar, a strip secured to the rim and disposed adjacent the base-portion of said body, and a connection between said anchor-legs and said strip, for holding the anchors to secure the body against outward movement, said legs projecting from the base of the body and having heads adapted to be held by said strip.

8. In a cushion-tire, the combination of a rim comprising a felly and sides, an elastic body having a base-portion, anchors secured in said body, a strip secured to the periphery of said felly and disposed adjacent the base-portion of said body, and a connection between said anchors and said strip for holding the anchors to secure the body against outward movement, spaces being formed between said strip and said felly to permit a part of said connection to move inwardly when the elastic body is compressed.

9. In a cushion-tire, the combination of a rim comprising a base and sides, an elastic body having a base-portion, anchors secured in said body and comprising cross-bars or stays and legs, a strip secured to the rim and disposed adjacent the base of said body, and a connection between said legs and said strip for holding them to secure the body against outward movement, said sides having guides or recesses therein, said cross-bars having their ends projected into said recesses to

secure the body against longitudinal movement.

10. In a cushion-tire, the combination of a rim comprising sides and a felly, an elastic body, a strip or band secured to the rim and on which the elastic body is held, and having depressed portions, bolts in said depressed portions and extending through the felly, and anchors secured in said body and connected to the strip to secure the body against outward movement.

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